

## CLAIMS

We claim:

1. A buckler assembly in a tape drive to connect a drive leader to a cartridge leader, wherein the drive leader is connected to a take-up reel and the cartridge leader is connected to a magnetic tape in a tape cartridge, comprising:

    a retainer member that receives the drive leader to be connected to the cartridge leader; and

    a sensor assembly disposed adjacent to the retainer member that detects the presence of the drive leader.

2. The buckler assembly of claim 1, further comprising:

    a first component having:

        a tube shaped section that rotates, and

        an arm having a proximal end and a distal end, wherein the proximal end attaches to the tube-shaped section, and wherein the distal end attaches to the retainer member; and

    a second component connected to the first component with a connector pin, wherein the second component rotates relative to the first component, and wherein the retainer member and the sensor assembly are disposed on the second component.

3. The buckler assembly of claim 1, wherein the drive leader includes a buckle bar configured to couple with the cartridge leader, wherein the buckle bar is magnetized, wherein the retainer member receives the buckle bar, and wherein the sensor assembly includes a hall sensor that detects a change in magnetic flux caused by the presence of the magnetized buckle bar.

4. The buckler assembly of claim 1, wherein the sensor assembly comprises:

    a magnetic member; and

    a hall sensor that detects changes in the magnetic flux of the magnetic member.

5. The buckler assembly of claim 4, wherein the drive leader includes a buckle bar formed from a material that changes the magnetic flux of the magnetic member when the retainer member receives the buckle bar.

6. The buckler assembly of claim 4, wherein the hall sensor is disposed between the magnetic member and the drive leader when the retainer member receives the drive leader.
7. The buckler assembly of claim 1, further comprising:
  - a connector; and
  - a flex cable connected to the connector and the sensor assembly.
8. A tape drive comprising:
  - a take-up reel;
  - a drive leader connected to the take-up reel; and
  - a buckler assembly having:
    - a retainer member that receives the drive leader; and
    - a sensor assembly disposed adjacent to the retainer member that detects the presence of the drive leader.
9. The tape drive of claim 8, wherein the drive leader includes a buckle bar that engages with the retainer member.
10. The tape drive of claim 9, wherein the buckle bar is magnetized, and wherein the sensor assembly includes a hall sensor that detects a change in magnetic flux caused by the magnetized buckle bar.
11. The tape drive of claim 9, wherein the sensor assembly comprises:
  - a magnetic member; and
  - a hall sensor that detects changes in the magnetic flux of the magnetic member.
12. The tape drive of claim 11, wherein the hall sensor is disposed between the magnetic member and the drive leader when the retainer member receives the drive leader.
13. A method of loading a tape cartridge with a magnetic tape into a tape drive, the method comprising:
  - receiving the tape cartridge in the tape drive;
  - positioning a drive leader in a buckler assembly, wherein the drive leader is attached to a take-up reel in the tape drive;

connecting the drive leader to a cartridge leader attached to the magnetic tape in the tape cartridge using the buckler assembly;

detecting the presence of the drive leader in the buckler assembly; and

when the present of the drive leader in the buckler assembly is detected, pulling the drive leader to extract the magnetic tape from the tape cartridge.

14. The method of claim 13, further comprising:

when the present of the drive in the buckler assembly is not detected, indicating an error.

15. The method of claim 13, wherein detecting the presence of the drive leader in the buckler assembly comprises:

using a sensor assembly disposed on the buckler assembly to detect the presence of the drive leader.

16. The method of claim 15, wherein the sensor assembly includes a hall sensor, and detecting the presence of the drive leader includes sensing a change in a magnetic flux using the hall sensor when the drive leader is positioned in the buckler assembly.